



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,747	08/29/2003	Arthur Gritzky	134366 (553-1027)	1770
45436	7590	02/12/2009		
DEAN D. SMALL THE SMALL PATENT LAW GROUP LLP 225 S. MERAMEC, STE. 725T ST. LOUIS, MO 63105			EXAMINER  CHENG, JACQUELINE	
			ART UNIT  3768	PAPER NUMBER
			MAIL DATE  02/12/2009	DELIVERY MODE  PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/652,747

**Applicant(s)**

GRITZKY ET AL.

**Examiner**

JACQUELINE CHENG

**Art Unit**

3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 21, 2008 has been entered.

***Response to Arguments***

2. Applicant's arguments, filed August 22, 2008, with respect to the rejection(s) of claim(s) under 35 U.S.C. 103(a) as unpatentable over Goto (US 2004/0165766 A1) in view of Vining (US 5,782,762) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made further in view of Heckel (US 4,697,178). Furthermore the examiner agrees with the applicant's arguments that Argiro ( does not disclose several of the elements in the independent claims 1, 9 and 17 and did not mean to intend to constitute Official Notice. The rejection under 35 U.S.C. 103(a) as unpatentable over Argiro (US 5,986,662) has been withdrawn, however, a new ground(s) of rejection is made combining Argiro with Goto, Vining and Heckel.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 2, 5, 6, 9, 10, 13, 14, 16-18, and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Goto (US 2004/0165766 A1) in view of Vining (US 5,782,762) and Heckel (US 4,697,178).

Goto discloses a method for forming and displaying an image comprising acquiring a volume image, reconstructed from a plurality of sectional slice images, from a medical image system such as an ultrasonic system (paragraph 0002, 0009). Goto processes the volume data to form multiple enhanced images each being based upon anatomic features such as bone, soft tissue or blood vessels (paragraph 0093, 0103). Any of the images that are created can be displayed simultaneously side by side (fig. 9A, paragraph 0104). What Goto does not disclose is identifying a plane within the volume, the plane having a thickness, however it would be obvious to one skilled in the art that in order to process things more quickly and efficiently, from a selected volume, a subvolume can be selected to be processed, such as disclosed in Vining. Vining discloses that after a series of two-dimensional images are stacked to create a three-dimensional volume, a targeted volume (such as a particular organ) is selected to be 3D rendered (selecting a plane with a thickness to cover the entire organ) (abstract, col. 6 line 10-25). It would be obvious to combine Vining with Goto as it would be obvious to have some sort of prescan in order to locate where exactly the observed object that is disclosed in Goto is located.

5. Goto does not disclose that the processor is configured to allow processing in real-time, however it is well known in the art to perform processing of a perspective view within a volume data set as disclosed by Heckel (abstract, col. 6 line 43-col. 17, col. 13 line 15-29). It would be obvious to configure the processor of Goto to perform the processing not only after the ultrasonic data set is stored, but while the data set is stored so that the operator can immediately see the region of interest.

6. **Claims 3, 4, 7, 8, 11, 12, 15, and 19-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Goto, Vining, and Heckel, and further in view of Argiro (US 5,986,662).

Goto does not disclose the multiple enhanced images being based upon the volume renderings, however Argiro discloses a method for viewing a set of voxel data on a device. The set of voxel data can be from any well known imaging modality such as ultrasound (col. 10 line 30-32) and in particular the ultrasound data from Goto. After the voxel data has been input a protocol with a group of preset viewing settings show up. The protocol can be automatically chosen depending on the type of input data (col. 12 line 7-28). The group of preset viewing settings is made up of different volume rendering images of the data for the user to select particular images from the gallery of images provided (col. 4 line 17-25). These different volume renderings can be to enhance different parts of the body such as cardia or bone mass and they can be depending upon the application the user wants, such as most dense cardia, or least dense cardia of the data set (col. 3 line 20-40). These images that are selected will appear in the examination viewer, which can be split into multiple subwindows where multiple images can be displayed simultaneously. The examination view can be used to examine only certain

subvolumes of the image data (a plane having a thickness), can have multiplaner views of views such as in a C-plane, and can be used to adjust each image in each subwindow (col. 14 line 25-50). One of these adjustment parameters is to adjust a slice thickness of the multiplanar reformatting views. By adjusting the slice thickness of each of the views each of the multiplaner views are transposed from being two-dimensional to being three-dimensional, the thicker slices in actuality being mini-volumes or slabs (col. 23-31). Therefore any desired images can be displayed simultaneously, multiple images volume rendered to display various anatomical features, multiple images of various plane thicknesses, multiple images of any well known volume rendering technique in the art (such as maximum density, surface texture, maximum transparency). It would be obvious to one skilled in the art at the time of the invention to process the ultrasound data from Goto using the method of Argiro in order to use the images to provide diagnosis and to create reports on the findings (abstract).

### *Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5,396,890 to Weng and US 6,436,049 B1 to Kamiyama.
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACQUELINE CHENG whose telephone number is (571)272-5596. The examiner can normally be reached on M-F 10:00-6:30.
9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. C./  
Examiner, Art Unit 3768

/Long V Le/  
Supervisory Patent Examiner, Art Unit 3768